City of Waterville
DEPARTMENT OF PUBLIC WORKS
6 Wentworth Court
Waterville, Maine 04901-4892

TEL (207) 680-4744 FAX (207) 877-7532

REQUEST FOR BIDS

Detachable Snowblower for Front End Loader

DATE: August 22, 2019

INSTRUCTIONS TO BIDDERS

1. GENERAL: The City of Waterville is accepting bids for a **Detachable Snowblower for Front-End Loader** meeting the specifications accompanying this document.

2. BID SUBMITTAL: Sealed bids will be accepted by the Office of the Director of Public Works, 6 Wentworth Court, Waterville, Maine 04901 up to and including 10:00 A.M. local time on Tuesday, September 24th, 2019 at which time they will be publicly opened and read. All bids will be placed in a sealed envelope clearly marked **"Bid – Detachable Snowblower"** in the center with the bidder's name and address in the upper left-hand corner. Bids not dated and time stamped by the Office of the Director of Public Works prior to the specified date and time stated above will be returned unopened.

3. WITHDRAWAL OR REVISION OF BID: A bidder may withdraw or revise a bid after it has been received by the Office of the Director of Public Works, provided the request is made in writing or in person before the time set for bid opening.

4. BID AWARD: Bid award, if the City determines to award, will be made within thirty (30) calendar days after bid opening, to the lowest responsible bidder whose bid fully complies with the requirements specified contingent upon approval by the City Council. The City reserves the right to reject any and/or all bids without absorbing any liability against the City.

5. Evaluation of Bids: For purposes of evaluating the bids, in the event of any discrepancies on a proposal between an amount written out in words versus the same amount expressed in numbers, the amount written in words shall govern (if applicable). Similarly, unit prices shall prevail over extended totals. I event of Additive Bid Items, the "low bid" shall be based upon the least total for the highest combination of bid items which may be awarded within the Control Amount (i.e. a predetermined budget amount to be disclosed at the time of bid opening). In the event that all Base Bids exceed the Control Amount, the "low bid" shall be based solely upon the lowest Base Bid submitted. Bidders shall examine and familiarize themselves with the Specifications and Bid Documents. The bidder shall in no way be relieved of any obligation to provide the product, service and/or equipment specified through error, mistake or omission.

6. INTERPRETATION OF ADDENDA: It shall be the bidder's responsibility to make inquiry as to any interpretation of the specifications or requirements of the participants. Any changes in the specifications shall be by written addenda.

7. SPECIFIED QUANTITY: One (1) Unit

8. INVOICES AND PAYMENT: Invoices shall be transmitted to the City of Waterville, 1 Common Street, Waterville, Maine 04901-6699. It is the practice of the City of Waterville to pay invoices within thirty (30) days of receipt. The City is exempt from State of Maine Sales Tax.

9. PENALTY CLAUSE: N/A
10. INSURANCE: N/A
11. PERFORMANCE BOND: N/A

12. CANCELLATION: The City reserves the right to cancel any unfulfilled portion of the Contract if, in the opinion of the City, the services or materials supplied are unsatisfactory or are not in compliance with the terms and conditions of the Specifications. Cancellation shall be effective following ten (10) calendar days written notice to the Bidder

13. EXCEPTIONS TO SPECIFICATIONS: These instructions to Bidders and General Paragraphs are an integral part of the Specifications for a **Detachable Snowblower for Front-End Loader** and will be binding on the Bidder. Bidders are advised that they shall be bound to the requirements of the Specifications, Instructions to Bidders and General Paragraphs unless exceptions are otherwise clearly noted in the Proposal. Any exceptions shall be considered, however, in determining the most acceptable proposal.

14. INQUIRIES: Any questions concerning this bid request should be directed to Fred Dechaine, Central Garage Forman, Department of Public Works, 6 Wentworth Court, Waterville, Maine 04901. Telephone inquiries can be made by calling (207) 680-4746 between the hours of 7:00 AM & 3:00 PM Monday thru Friday.

15. GENERAL PARAGRAPHS: See attached **Bid Specifications**.

City of Waterville
Department of Public Works
BID SPECIFICATIONS
Detachable Snowblower for Front End Loader

GENERAL

The bidder is the manufacturer or an authorized dealer of the proposed unit, the detachable snowblower described is all made with new parts. The snow blower manufacturer has a quality assurance program under the supervision of an engineer.

The equipment offered can be of American, Canadian or European manufacture. The bidder must be either a manufacturer or a factory authorized dealer engaged in the business of selling and servicing the equipment bid upon. This equipment will be installed on a brand new 30 – 40,000 lb. rated, +/- 180 HP front end loader.

The unit specified herein shall consist of a one stage with helical augers or two stage with dual auger snowblower attachment to a suitable mounting on a front-end wheel loader, having a rated capacity of up to 2750 tons/hour with a minimum 300 hp engine, capable of handling all types of snow including wet heavy snow to hard packed frozen snow.

The unit bid is capable of arduous duty for prolonged periods of time without deformation and/or failure of components in ambient temperatures to minus forty degrees -40°F.

The diesel engine drives a mechanical transmission, right angle gear box located behind the impeller casing; it directs the power directly to the impeller through a chain case for the conveyors. The conveyors are the augers type. The configuration of the snowblower is made in order to maximize the visibility of the operator in front of the snow blower.

The unit is provided with a female blank matching the existing loader coupler system.

The unit being provided shall meet or exceed the specifications as outlined below.

MINIMUM OPERATION CAPACITY (TVC)*

Up to 2750 tons per hour with a minimum 300 hp engine. *TVC (Theoretical Volumetric Capacity)

Casting distance of 46 m (150 ft).

MINIMUM DIMENSIONS

Cutting width 2845 mm (112 in.)

Overall height 3531 mm (139 in.) (Telescopic chute at its minimum height).

Overall length 2286 mm (90 in. W/O quick attach)

Working height 1397 mm (55 in.).

Weight is 4490 kg (9 900 lb). (Without quick attach and Diesel fuel.)

SNOWBLOWER FRAME

Fully welded construction.

Steel triangular construction.

Sides and bottom of the bucket made of 690 MPA (100 000 psi) steel, in order to withstand loads induced by quick attach coupler.

SCRAPER BLADE AND SKATES

Scraper blade made out of steel over the full width.

Total wear surface of skates is 1 935 cm^2 (300 $in.^2$) with carbide insert 580 cm^2 (90 $in.^2$).

VERTICAL SIDE KNIVE

Interchangeable side knives made of steel with a yield strength of 690 MPA (100 000 psi).

TELESCOPIC LOADING CHUTE - MINIMUM

Loading chute diameter 406 mm (16 in.) and consists of one (1) vertical section, one (1) directional section and one (1) flexible end cap section.

457 mm (18 in.) hydraulic extension to allow the loading chute to cast at any adjustable height from 3531 to 3988 mm (139 to 157 in.).

Steel and UHMW (Ultra High Molecular Weight) plastic rotation system to prevent friction and wear.

Flexible and directional sections made of steel having a thickness of 5 mm (3/16 in.) and a hardness of 500 Brinell.

Flexible section tilts through one (1) hydraulic cylinder to control the projection distance from 3 to 15 m (10 to 50 ft.)

Chute as 300° hydraulic rotation.

Rotation carried out using a hydraulic motor and a chain with a tension with a capacity of 5204 N (1170 lbf.) Rack and pinion system not acceptable.

IMPELLER AND IMPELLER CASING - MINIMUM

1016 mm (40 in.) diameter impeller and five (5) bolt-on and concave 690 Mpa (100 000 psi) steel impeller blades.

The impeller is flange bolted mount.

The impeller casing 1016 mm (40 in.) nominal diameter and constructed of 9.5 mm (3/8 in.) 550 Brinell hardness abrasive steel.

Impeller casing rotation is hydraulically operated through a cylinder and rotates through 45^o.

Impeller casing supported by 406 mm (16 in.) dia. UHMW bearing with two (2) steel wheel guides with bushing.

AUGER CONVEYOR - MINIMUM

Two (2) interchangeable helical vertical auger system

Two (2) interchangeable one-piece horizontal augers having a diameter of 508 mm (20 in.). The tube diameter must be 5 1/2''.

Flights has saw tooth design located every 30 degrees (12 per pitch) and in addition between each tooth replaceable high tensile strength steel square shaped ice cutter bolted on the flights to break ice.

The 9.5 mm (3/8 in.) thick flight made of high tensile strength steel welded on a one (1) piece tube.

A rubber deflector is bolted on the blower frame above top auger.

DIESEL ENGINE - MINIMUM

Diesel engine with minimum 205 kW (300 hp) @ 2200 rpm, turbocharged and air/air after cooled electronic.

Cummins QSB 6.7 Liter Tier 4F approved engine or equivalent.

To avoid clogging by the snow of the high snow bank in the right side, the radiator is located in the left side of the machine and is at 12 inches from the side.

Alternator: 165 Amps.

Oil and fuel filters with replaceable cartridge.

Low oil pressure and high coolant temperature shutdown system.

Air cleaner inside the hood with restrictor gage.

120-Volt 750 Watts Block heater with an external weather proof receptacle.

Cold start device with a pre-heating element in the air intake with an operation indicator in the dashboard.

Inline fuel water separator.

The exhaust is equipped with a muffler.

HYDRAULIC SYSTEM- MINIMUM

Hydraulic pump allowing an appropriate operation of the hydraulic components (if applicable). Time to complete the action is:

-Impeller casing rotation: 8 - 9 seconds.
-Chute rotation: 6 - 7 seconds.
-Telescopic chute: 3, 4 – 3, 6 seconds.
-Flexible end cap: 1, 5 - 2 seconds.
-The reaction time within 0.10 second to allow quick and proper operation of all of these hydraulic functions.

Heavy-duty electro-hydraulic valves with insulated electric connections.

SAE 100R2 type hydraulic hoses.

Ten (10) micron oil filter on the return line.

Oil tank equipped with a breather cap and a sight glass and dip stick gauge.

A bolt-on inspection door on top of the tank is provided.

All "JIC" type hose couplings.

All hydraulic hoses are attached and suitably protected to avoid wear due to vibrations.

ENGINE COWLING

Tilt up type satin steel engine cowling to facilitate accessibility of the engine and its components.

FUEL SYSTEM

Fuel tank of sufficient capacity to ensure eight (8) hour of operation in normal use.

102 mm (4 in.) diameter ventilated fuel cap with safety valve in the event of pressurization.

TRANSMISSION DRIVE

Mechanical drive equipped with ZF hydraulically actuated multi-disc clutches, maintenance free a gear box, chain case and planetary gear box lubricated in oil bath.

All external driving shafts u-joints are permanently lubricated and maintenance free.

Transmission is able to handle the power and torque of the diesel engine in all conditions.

Two (2) shear bolt flanges to protect the transmission drive, one for the complete system and another for the augers.

Bevel gear box divides power for the impeller and for the augers.

All input and output shafts of the gear box and drop box are splined type which drive the impeller.

A driveshaft transmits power to the auger through a planetary hub reduction gear and a roller chain.

The clutch engaged hydraulically and controlled from the cab.

ELECTRICAL SYSTEM (12 volts)

*Preferred operation system to be by **WIRELESS REMOTE** or:*

Control box and instrument panel installed in the wheel loader's cab. Volume of the box is 960 cm3 (378 po3).

Multi-function joystick installed in the wheel loader's cab for hydraulic control functions.

Illuminated tachometer and hourmeter.

Illuminated voltmeter, oil pressure gauge and engine coolant temperature gauge.

Illuminated fuel level gauge.

Switch on joystick for variable engine throttle control.

Ignition switch.

Switch for clutch engagement and disengagement.

All electrical harnesses to have weatherproof connectors.

All electric wires are numbered every 50 mm (2 in.) inches.

Electrical system is equipped with a main switch.

Battery capacity of 1850(CCA)

Red emergency shut-off switch button (mushrooms type) installed near the joystick multi-functional control.

PAINT

All metal surfaces are sandblasted or sanded.

One (1) coat of epoxy primer and three (3) coats of polyurethane paint ***TO MATCH LOADER***.

MANUALS AND TOOLS

One (1) operation, parts and maintenance manuals for snow blower and engine. Electrical schematic is included with the parts manual.

A tool box with all necessary tools to change shear bolt and ten (10) set of each model is provided with the unit.

WARRANTY

Twelve (12) month warranty on parts & labor, starting from the date the unit is delivered.

*****NOTE – Bidder is responsible for all costs associated with transporting the loader to and from their installation facility.***

TOTAL SUPPLIED & INSTALLED PRICE: **$ _____**

BIDDER NAME: _____

SIGNATURE: _____

DATE: _____

OPTIONAL EQUIPMENT
PRICE INSTALLED

Scraper blade steel with carbide inserts through its length	$ _____
Rubber scraper blade	$ _____
Full width skid (Hardox 550)	$ _____
Right side steering vanes hydraulically controlled.	$ _____
Dual side steering vanes hydraulically controlled	$ _____
Hydraulic tilting chute (right side)	$ _____
Long life flexible and directional loading chute sections made of 9.6mm (3/8) inches steel with chromium carbide wear surfacing treatment	$ _____
Long life impeller casing constructed of 9.6mm (3/8in.) steel with chromium carbide wear surfacing treatment	$ _____
Impeller casing rotation is hydraulically operated through a worm gear and rotates through 150^{o}	$ _____
Ice cutters on both augers	$ _____
LED working lights on blower head & chute	$ _____
Wireless cab control	$ _____